

1.6.7 Embodied Energy of Floor Structures in the U.S.

<u>Floor Structure with Interior Ceiling Finish of Gypsum Board, Latex Paint</u>	<u>Embodied Energy (MMBtu/SF) (1)</u>	<u>CO2 Equivalent Emissions (lbs/SF)</u>
Glulam joist and plank decking	0.04	3.06
Precast Hollowcore	0.05	13.43
Wood I-joist	0.02	2.03
Open-web Steel Joist	0.06	7.94
Open-web Steel Joist with concrete topping	0.07	12.30
Precast Double-T	0.04	11.38
Precast Double-T with concrete topping	0.06	16.45
Steel Joist	0.06	8.82
Steel Joist with plywood decking	0.06	9.28
Suspended Concrete Slab	0.12	29.19
Wood Joist	0.02	1.65
Wood Joist with plywood decking	0.03	2.38
Wood Chord and Steel Web truss	0.05	5.91
Wood Truss	0.03	2.71

Floor Structure without Interior Ceiling Finish

Glulam joist and plank decking	0.05	4.32
Precast Hollowcore	0.06	14.68
Wood I-joist	0.04	3.26
Open-web Steel Joist	0.07	9.19
Open-web Steel Joist with concrete topping	0.09	13.54
Precast Double-T	0.05	12.61
Precast Double-T with concrete topping	0.07	17.70
Steel Joist	0.07	10.08
Steel Joist with plywood decking	0.08	10.54
Suspended Concrete Slab	0.13	30.42
Wood Joist	0.04	2.91
Wood Joist with plywood decking	0.05	3.64
Wood Chord and Steel Web truss	0.06	7.17
Wood Truss	0.04	3.95

Note(s): Assumptions: Values are general estimations for the U.S. 60 year building lifetime. Low rise building. 1) Embodied Energy: Energy use includes extraction, processing, transportation, construction, and disposal of each material.

Source(s): Athena Institute. Athena EcoCalculator for Assemblies v.3.5.2. 2010. Available at www.athenasmi.org/tools/ecoCalculator/index.html